U.S. DEPARTMENT OF ENERGY | Nuclear Energy

Accelerating Deployment of Innovative Nuclear Technologies

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NE's Small Business Voucher Program

- **NE is implementing a Voucher Program to address two central challenges to effective partnerships with small business:**
  - Small businesses may not be aware of existing national lab and research network capabilities
  - It is too difficult or expensive for small business to work with the National Laboratories
- **The program is modelled after the Office of Energy Efficiency/Renewable Energy (EERE)'s Small Business Voucher Program**
- **Applications for vouchers will be solicited, reviewed and selected through a competitive process**
  - Approximately $2M in vouchers will be awarded using existing R&D program funds
  - Small Business voucher recipients do not receive any funding from DOE
    - The voucher funds the cost of work to be performed by DOE Labs or NSUF partner facilities
    - A 20% cost share is required from the Small Business recipient, which could include in kind contributions
- **For the initial voucher program, DOE will accept applications in a subset of DOE NE program activities**

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Other DOE Initiatives to Accelerate Deployment of Advanced Reactors

- **The Administration has made it a priority to accelerate the commercial availability of advanced low-carbon nuclear options to meet future energy needs**
- **DOE supports advancing innovative reactor technologies and improving their economic competitiveness by:**
  - Conducting targeted laboratory R&D to reduce technical challenges
  - Completing the advanced test/demonstration reactor study to identify options to address innovation and commercialization
  - Awarding funds for cost-shared further development of industry concepts
  - Working with the Nuclear Regulatory Commission (NRC) to reduce licensing challenges for advanced reactors
  - Developing an integrated advanced reactor deployment strategy.
- **SEAB Task Force on the Future of Nuclear Power will examine the possibility of a major new deployment of nuclear power, to include advanced reactors, in the 2030 -2050 time period**

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FY2015 Industry Collaboration

The FY15 Omnibus Spending Bill included the following:

Advanced Reactor Industry Only Competition

- $12,500,000 is for the further development of two performance based advanced reactor concepts, of which $7,500,000 is for industry-only competition of two performance-based advanced reactor concepts and $5,000,000 is for the national laboratories selected to work with the awardees to perform the work required by the awardees to meet the goals of the awards

Advanced Reactor Technology (2015) Funding Opportunity Announcement

- Released in mid-July
- Plan to complete selection process and make awards in CY15
- Looking to support a broad scope including such areas as R&D, design analysis, scale testing or licensing support to further development in the areas of safety, operations, and economics
- FOA is designed to support multi-year funding of two concepts (up to $80M DOE support, with 20% cost-share)

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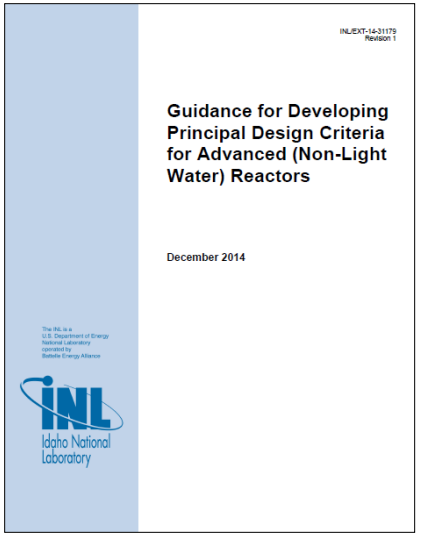
Advanced Reactor Licensing Initiatives

- **DOE and NRC have noted the need for regulatory guidance for non-light water reactor designs**
  - Existing licensing guidance is written for light water reactors
  - A regulatory framework is needed to support reasonable timelines for design certification and licensing
- **NE and NRC initiated a joint project for development of General Design Criteria (GDC) for non-light water reactor concepts**
  - DOE issued draft GDC in December 2014 based on stakeholder feedback and requested development of regulatory guidance from NRC
  - NRC anticipates developing and issuing regulatory guidance by end of 2016
- **DOE and NRC recently held a workshop to explore ways to enhance interaction between advanced reactor vendors and regulators**
- **A second workshop is planned for Spring 2016.**



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Industry Initiatives

- U.S. Nuclear Infrastructure Council - Advanced Reactor Summit in Feb 2015
- Nuclear Energy Institute - Advanced reactor industry group initiated in Feb 2015
- Nuclear Innovation Alliance - November 2015 meeting to facilitate development and licensing
- Electric Power Research Institute – Held workshop on industry RD&D needs for advanced reactor commercialization in October 2015
- Several start-up companies have formed that are focused on advanced reactors
- NGNP Industry Alliance has engaged with European Union counterparts on nuclear cogeneration application opportunities for high-temperature gas cooled reactors